

NWS FORM E-19 (COVER)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

REPORT ON RIVER GAGE STATION

REVISED, PRINTED DATES: 04/16/2009, 08/22/2010

LOCATION: HARDY

STREAM: REPUBLICAN RIVER

BASIN: REPUBLICAN 10

HSA: GID

REFERENCES:

ANNUAL FLOOD DAMAGE REPORTS

NWS FORM E-19 - SEP 1980

USGS FORM 9-197

USGS STATION DESCRIPTION - 4/2/2009

WATER RESOURCES DATA FOR NE - USGS

WATER RESOURCES DATA - KANSAS WATER YEAR 1997

WATER SUPPLY PAPER 796-B - FLOOD ON REPUBLICAN AND KANSAS RIVERS 1935

ABBREVIATIONS:

BM	- bench mark	EPA	- Environmental Protection Agency
DS	- downstream	IBWC	- International Boundary and Water Comm.
US	- upstream	MSRC	- Mississippi River Commission
HW	- high water	MORC	- Missouri River Commission
LW	- low water	NOAA	- National Oceanic and Atmospheric Admin.
RB	- right bank	NOS	- National Ocean Survey
LB	- left bank	NWS	- National Weather Service
MGL	- mean gulf level	TVA	- Tennessee Valley Authority
MLW	- mean low water	USACE	- U.S. Army Corps of Engineers
MSL	- mean sea level	USBR	- U.S. Bureau of Reclamation
MLT	- mean low tide	USGS	- U.S. Geological Survey
MT	- mean tide	USWB	- U.S. Weather Bureau
WQ	- water quality	NGVD	- National Geodetic Vertical Datum
RM	- reference mark	NAD	- North American Datum
RP	- reference point		

LOCATION IDENTIFICATION: HDYN1

NWS INDEX NUMBER: 25-3591-9

USGS NUMBER: 06853500

MAP OF GAGE LOCATION

LATITUDE: 39 59 33
LONGITUDE: 97 55 53

SOURCE: USGS STATION DESCRIP

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
NWS FORM E-19 PAGE 1: GAGE MAP

BENCHMARKS

ELEVATION OF GAGE ZERO: 1501.460 VERTICAL DATUM: NGVD 1929
LEVELING AGENCY AND DATE: 7/2/08 CHECKBAR: 22.385
RATING AGENCY: USGS

BENCHMARK	DESCRIPTION	GAGE ZERO	DATUM
MP2	MP-2 IS A CHISELED SQUARE ON TOP OF THE BRIDGE GUARDRAIL NEAR THE WIRE WEIGHT GAGE.	23.784	1525.244
RM6	THIS IS A STANDARD TABLET ON THE LEFT UPSTREAM GUARD RAIL (TOP) OF THE PRESENT BRIDGE. THE ELEVATION IS 22.42 FEET.	22.420	1523.880
RM7	THIS IA A STANDARD TABLET ON THE RIGHT DOWNSTREAM GUARD RAIL (TOP) OF THE PRESENT BRIDGE. THE ELEVATION IS 22.445 FEET.	22.445	1523.905
RM8	A LAG BOLT IN A TREE 40 FEET DOWNSTREAM OF RM7. ELEVATION IS 18.339 FEET.	18.339	1519.799
RM9	HEAD OF SPIKE IN TREE 40 FT DOWNSTREAM OF RM7.	17.561	1519.021

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
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Revised, Printed Dates: 04/16/2009, 08/22/2010
NWS FORM E-19 PAGE 2: BENCHMARKS

GAGES

DCP

TELEM

NESS ID: CE2F3034
 OWNER: USGS
 REPORT TIME: 0040
 INTERVAL: 60
 CRITERIA: PC HG

TYPE OF TELEMETRY: dedicated
 OWNER: Unk
 PHONE NUMBER:
 INTERVAL:

PAYOR/COST OF LINE: Unk / \$

GAGE TYPE	OWNER	MAINTENANCE	BEGAN	ENDED	GAGE LOCATION/REMARKS
chain	USGS	USGS	05/19/1932	08/10/1945	THE OUTSIDE GAGE WAS A CHAIN AND WEIGHT INSTALLATION.
Unk	USGS	USGS	05/19/1932	07/19/1995	PRESENT STATION ESTABLISHED BY USGS. A-35 RECORDER INSTALLED IN A 24" CORRUGATED STILLWELL ON OLD BRIDGE THEN IN USE AT PRESENT DATUM. THE ORIGINAL STILLWELL WAS REPLACED, ON 9/29/47, BY A BLACK STEEL PIPE STILLING WELL, ON DOWNSTREAM SIDE OF OLD BRIDGE
wireweight	USGS	NWS	05/10/1945		A WIRE WEIGHT GAGE WAS INSTALLED ON THE DOWNSTREAM HANDRAIL REPLACING THE CHAIN AND WEIGHT GAGE AS THE OUTSIDE GAGE. ZERO DATUM REMAINED UNCHANGED. CHECKBAR ELEVATION IS 22.689 FEET AS OF 8/18/1999. WWT MOVED TO US SIDE ON 2/26/09. CG ELE. IS 22.385 FT.
Unk	NWS	NWS	04/18/1978	04/01/1988	NWS INSTALLED A BDT GAGE TO THE ADR RECORDER IN THE GAGE HOUSE FOR WEEKLY RIVER READING.
Unk	NWS	NWS	04/01/1988	07/28/1995	NWS CONCORDIA OFFICE REPLACED THE BDT GAGE WITH THIS LARC GAGE. THIS GAGE, ALONG WITH THE A-35 AND ADR RECORDERS, ARE DRIVEN BY A BUBBLER GAGE, HOUSED IN A STANDARD METAL SHELTER.
bubble	USGS	USGS	05/06/1992		A DCP AND SHAFT ENCODER WERE INSTALLED 5/6/92. ON 7/19/95 A PS-2 NON SUBERSIBLE PRESSURE TRANSDUCER WAS INSTALLED AND THE MERCURY MANOMETER, DIGITAL AND GRAPHIC RECORDERS WERE REMOVED.
tipping	USGS	USGS	07/19/1995		A TIPPING BUCKET RAIN GAGE WAS INSTALLED ON TOP OF THE GAGE HOUSE.
crest	USGS	USGS	08/09/2000		A CREST STAGE INDICATOR WAS INSTALLED ON THE RIGHT BANK NEAR THE ORIFICE (ALSO KNOWN AS A HIGH FLOW OR FLOOD ORIFICE). THE ELEVATION OF THE BOTTOM OF THE STICK IS 6.535 FEET.
crest	USGS	USGS	03/02/2005	12/31/2050	AN UPPER CSI INSTALLED ON RIGHT BANK NEAR RIGHT DOWNSTREAM BRIDGE ABUTMENT. ELEVATION OF BOTTOM OF STICK IS 10.782 FT.

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
 ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
 NWS FORM E-19 PAGE 3: GAGES

HISTORY

PUBLICATION/LOCATION OF RECORDS	STARTING DATE	ENDING DATE
ANNUAL REPORTS	06/01/1896	11/01/1903
WRD NE	06/01/1904	09/01/1915
WRD NE	05/19/1932	
WATER YEAR REPORT - USGS	10/01/1997	

TYPE OF GAGE	OWNER	STARTING DATE	ENDING DATE
chain	USGS	05/19/1932	08/10/1945
Unk	USGS	05/19/1932	07/19/1995
wireweight	USGS	05/10/1945	
Unk	NWS	04/18/1978	04/01/1988
Unk	NWS	04/01/1988	07/28/1995
bubble	USGS	05/06/1992	
tipping	USGS	07/19/1995	
crest	USGS	08/09/2000	
crest	USGS	03/02/2005	12/31/2050

ZERO ELEVATION	STARTING DATE
1501.460	05/19/1932

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
 ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
 NWS FORM E-19 PAGE 4: HISTORY

CRESTS

FLOOD STAGE: 11.00 ACTION STAGE: 9.00 BANKFULL STAGE: 10.50
 FLOOD FLOW: 6327 ACTION FLOW: 3887

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON OLD DATUM	CAUSED BY ICE JAM	REMARKS
05/29/1903	UNDEF	-0.99	35500				NO RECORD OF WHAT THE STAGE WAS AT THIS TIME.
07/05/1904	UNDEF	6.80	9460				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
07/04/1905	UNDEF	11.00	30000				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
05/02/1906	UNDEF	4.95	5220				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/07/1907	UNDEF	4.00	3540				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/18/1908	UNDEF	7.80	12900				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
09/19/1909	UNDEF	7.00	10100				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
08/20/1910	UNDEF	5.50	6200				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
08/03/1911	UNDEF	10.50	21300				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
03/28/1912	UNDEF	6.50	8150				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
05/10/1913	UNDEF	4.30	3130				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/17/1914	UNDEF	8.00	11500				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/19/1915	UNDEF	12.50	38000				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
02/25/1932	UNDEF	10.09	32000				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
04/22/1933	UNDEF	8.73	6200				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/18/1934	UNDEF	8.50	6000				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/02/1935	UNDEF	19.40	225000				RECORD FLOOD.
05/09/1936	UNDEF	10.15	10100				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/04/1937	UNDEF	9.65	9100				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/01/1938	UNDEF	9.22	7620				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/23/1939	UNDEF	10.24	11700				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/10/1940	UNDEF	9.56	9750				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/09/1941	UNDEF	13.20	24800				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
 ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
 NWS FORM E-19 PAGE 5: CRESTS

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON OLD DATUM	CAUSED BY ICE JAM	REMARKS
06/25/1942	UNDEF	11.10	14000				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
04/12/1943	UNDEF	9.39	11100				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/15/1943	UNDEF	10.65					THIS WAS THE MAXIMUM GAGE HEIGHT FOR THE YEAR.
04/25/1944	UNDEF	9.18	9230				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
08/26/1944	UNDEF	10.22					THIS WAS THE MAXIMUM GAGE HEIGHT FOR THE YEAR.
07/17/1945	UNDEF	11.12	18500				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
07/07/1946	UNDEF	11.20	11800				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/24/1947	UNDEF	17.00	100000				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/24/1948	UNDEF	11.15	13700				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/09/1949	UNDEF	12.60	20000				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
07/10/1950	UNDEF	13.70	30000				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
06/02/1951	UNDEF	12.59	18600				THIS WAS THE PEAK DISCHARGE AND ASSOCIATED GAGE HEIGHT FOR THE YEAR.
07/15/1952	UNDEF	9.91	10700				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/08/1953	UNDEF	9.02	6380				PEAK "Q" AND "HG" FOR THE YEAR. "Q" WAS AFFECTED BY REGULATION OR DIVERSION.
05/24/1954	UNDEF	6.76	2190				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/06/1955	UNDEF	10.40	8400				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/06/1956	UNDEF	8.11	2710				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/17/1957	UNDEF	14.83	38900				HIGHEST SINCE HARLAN COUNTY LAKE BUILT. "Q" AFFECTED BY REGULATION OR DIVERSION.
09/06/1958	UNDEF	11.18	6960				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/05/1959	UNDEF	10.08	5410				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
03/28/1960	UNDEF	11.48	8070				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/07/1961	UNDEF	10.56	6550				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/02/1962	UNDEF	10.05	5580				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
09/23/1963	UNDEF	9.70	5050				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
08/18/1964	UNDEF	8.63	3660				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
05/23/1965	UNDEF	10.42	6210				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
11/04/1965	UNDEF	8.98	4190				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
NWS FORM E-19 PAGE 5-2: CRESTS

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON OLD DATUM	CAUSED BY ICE JAM	REMARKS
06/23/1967	UNDEF	9.35	4890				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
04/14/1968	UNDEF	6.59	1820				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
09/02/1969	UNDEF	9.38	4620				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
04/20/1970	UNDEF	7.09	2220				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/14/1971	UNDEF	10.36	5990				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/12/1972	UNDEF	7.08	1940				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
09/04/1973	UNDEF	12.57	8740				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
10/11/1973	UNDEF	12.52	8640				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/24/1975	UNDEF	10.22	5360				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
04/24/1976	UNDEF	7.30	2370				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
09/13/1977	UNDEF	11.83	7460				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
09/17/1978	UNDEF	-0.99	4000				PEAK DISCHARGE FOR THE YEAR BUT NO STAGE WAS AVAILABLE.
03/22/1979	UNDEF	9.32	4200				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
10/31/1979	UNDEF	7.59	2530				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/18/1981	UNDEF	9.64	4750				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
05/14/1982	UNDEF	11.68	8920				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/18/1983	UNDEF	7.94	2850				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
10/01/1983	UNDEF	13.65	17400				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
08/04/1985	UNDEF	11.29	7130				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
09/07/1986	UNDEF	8.90	3920				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
04/14/1987	UNDEF	11.17	6940				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/20/1988	UNDEF	10.36	5750				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/02/1989	UNDEF	9.51	4630				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/17/1990	UNDEF	8.98	4030				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/06/1991	UNDEF	5.50	1110				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/14/1992	UNDEF	11.19	6530				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
NWS FORM E-19 PAGE 5-3: CRESTS

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON OLD DATUM	CAUSED BY ICE JAM	REMARKS
07/27/1993	UNDEF	12.48	10500				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
03/05/1994	UNDEF	7.87	3100				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
05/29/1995	UNDEF	10.11	5390				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
08/07/1996	UNDEF	7.95	3040				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
11/16/1997	UNDEF	10.92	6320				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
04/07/1998	UNDEF	7.10	2350				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
05/21/1999	UNDEF	8.80	3860				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/06/2000	UNDEF	9.08	4150				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
05/05/2001	UNDEF	9.12	4190				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
05/27/2002	UNDEF	3.66	385				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
06/23/2003	UNDEF	8.31	3380				PEAK "Q" AND "HG" FOR THE YEAR. "Q" AFFECTED BY REGULATION OR DIVERSION.
07/03/2004	UNDEF	6.12	1470				
08/17/2005	UNDEF	3.91	448				
08/22/2006	UNDEF	3.67	370				
05/07/2007	UNDEF	9.26	4260				
05/26/2008	07:45	10.74	5989				
05/26/2008	UNDEF	10.77	5750				
10/23/2008	05:30	11.19					MAXIMUM PEAK STAGE AND PEAK FLOW FOR THE YEAR.

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
NWS FORM E-19 PAGE 5-4: CRESTS

LOW WATER RECORDS

DATE OF LOW WATER	STAGE (ft)	FLOW (CFS)	REMARKS
08/09/1934	0.00	0	NO FLOW AUGUST 9-19, 1934.
12/22/1960		50	MINIMUM DISCHARGE FOR THE YEAR.
12/12/1961		60	MINIMUM DISCHARGE FOR THE YEAR.
07/10/1963		38	MINIMUM DISCHARGE FOR THE YEAR.
07/25/1964		19	MINIMUM DISCHARGE FOR THE YEAR.
11/30/1964		70	MIN. DISCHARGE FOR THE YEAR (ALSO 12/01/1964)
05/29/1966		61	MIN. DISCHARGE FOR THE YEAR (ALSO 6/06/1966).
11/12/1966		39	MINIMUM DISCHARGE FOR THE YEAR.
07/12/1968		22	MINIMUM DISCHARGE FOR THE YEAR.
12/29/1969		65	MIN. "Q" FOR THE YEAR (ALSO 12/30/69-1/2/70).
09/11/1970		37	MIN. DISCHARGE FOR THE YEAR (ALSO 9/12/1970).
10/01/1971		23	MIN. "Q" FOR THE YEAR (ALSO 10/02,10/12-10/14)
07/08/1973		68	MINIMUM DISCHARGE FOR THE YEAR.
09/22/1974		40	MINIMUM DISCHARGE FOR THE YEAR.
05/27/1975		38	MINIMUM DISCHARGE FOR THE YEAR.
09/24/1976		29	MINIMUM DISCHARGE FOR THE YEAR.
11/30/1976		10	MIN. "Q" FOR THE YEAR (ALSO 12/01-12/02/1976)
06/19/1978		28	MINIMUM DAILY DISCHARGE FOR THE YEAR.
08/09/1979		24	MIN. DISCHARGE FOR THE YEAR (ALSO 8/10/1979).
07/14/1980		30	MIN. DISCHARGE FOR THE YEAR (ALSO 7/15/1980).
04/30/1981		38	MINIMUM DISCHARGE FOR THE YEAR.
01/10/1982		70	MINIMUM DISCHARGE FOR THE YEAR.
07/23/1983		87	MIN. DISCHARGE FOR THE YEAR (ALSO 7/24/1983).
09/21/1984		34	MIN. DISCHARGE FOR THE YEAR (ALSO 9/22-9/23).
10/01/1984		42	MIN. DISCHARGE FOR THE YEAR (ALSO 10/2,9,10).
07/18/1986		54	MIN. DISCHARGE FOR THE YEAR (ALSO 7/19-7/20).
01/18/1987		80	MIN. DISCHARGE FOR THE YEAR (ALSO 9/09/1987).
06/21/1988		17	MINIMUM DISCHARGE FOR THE YEAR.
09/29/1989		21	MIN. DISCHARGE FOR THE YEAR (ALSO 9/30/1989).
10/02/1989		19	LOWEST DAILY MEAN FOR THE YEAR.
08/03/1991		5	ACTUAL L.D.M. FOR THE YEAR WAS 4.8 CFS.
06/27/1992		5	ACTUAL L.D.M. FOR THE YEAR WAS 5.1 CFS.
10/04/1992		73	LOWEST DAILY MEAN FOR THE YEAR.
06/17/1994		61	LOWEST DAILY MEAN FOR THE YEAR.
09/28/1995		54	LOWEST DAILY MEAN FOR THE YEAR.
10/11/1995		47	LOWEST DAILY MEAN FOR THE YEAR.
LOWEST DAILY MEAN FOR THE YEAR. LOW WATER			DATE OF STAGE FLOW REMARKS
09/15/1997	1.30	56	LOWEST DAILY MEAN FOR THE YEAR.
09/15/1998			POINT OF ZERO FLOW = GAGE AT 1.30 FT
09/19/1998		39	LOWEST DAILY MEAN FOR THE YEAR.
09/26/1999	1.36	33	LOWEST DAILY MEAN FOR THE YEAR.
09/01/2000			
09/19/2000		22	LOWEST DAILY MEAN FOR THE YEAR.
12/21/2000		15	LOWEST DAILY MEAN FOR THE YEAR.
08/08/2002		13	
08/17/2003		12	LOWEST DAILY MEAN FOR THE YEAR.

08/28/2004	6	Instantaneous low flow was actually 6.3 cfs.
07/24/2005	0	Instantaneous low flow was actually 0.19 cfs.
07/07/2006	0	Actual flow 0.09 CFS
10/14/2006	0	Actual flow was 0.01 CFS.
10/04/2007	27	INSTANTANEOUS LOW FLOW FOR THE YEAR.

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ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
NWS FORM E-19 PAGE 6-2: LOW WATER

CONDITIONS AFFECTING FLOW

MILES ABOVE MOUTH: 141.2 DRAINAGE AREA: 22401.0 POOL STAGE: 0.0

STREAM BED: COMPOSED MAINLY OF SHIFTING SAND.

REACH: A FEW MILES UPSTREAM AND DOWNSTREAM OF THE GAGE.

REGULATION: DISCHARGE TO SOME DEGREE IS REGULATED BY HARLAN DAM, BUILT IN 1952, LOCATED 91 MILES UPSTREAM.

DIVERSION: BOSTWICK IRRIGATION DISTRICT DIVERTS MUCH WATER UPSTREAM.

WINTER: THE CHANNEL IS SUBJECT TO FREEZING AND CAN EXPECT A HEAVY ICE EFFECT DURING MOST YEARS.

TOPOGRAPHY: THE CHANNEL CONSISTS OF A WIDE FLAT SANDY STREAM BED SUBJECT TO CONSIDERABLE SHIFTING. SANDBARS AND LOW SAND BANKS CONTAIN HEAVY WILLOW TREE GROWTH. CHANNEL CAPACITY HAS DETERIORATED CONSIDERABLY SINCE THE COMPLETION OF UPSTREAM FLOOD CONTROL PROJECTS.

REMARKS: ABOVE 11 FT. FLOW WILL ENCOUNTER HEAVY TIMBER GROWTH AND REACH OUT INTO CULTIVATED PLAIN. SANDBARS CONTAIN HEAVY WILLOW TREE GROWTH. EXTREME STAGES MAY PRODUCE AN OVERFLOW WIDTH OF ABOUT 1.5 MILES.

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
NWS FORM E-19 PAGE 7: CONDITIONS

DAMAGE

STAGE	AREAS AFFECTED
11.00	AT FLOOD STAGE, RURAL PASTURE AND FARMLANDS BEGIN TO FLOOD.
12.00	THE NORTH AND SOUTH APPROACHES TO THE RIVER BRIDGE CAN FLOOD. EVEN AT EXTREME FLOWS, THE TOWN OF HARDY IS OUTSIDE THE FLOOD PLAIN.
12.50	FLOW OVER THE ROAD WILL OCCUR ON THE RIGHT BANK AND MAY REACH A MAXIMUM WIDTH OF 0.9 MILE WHICH WOULD AFFECT AGRICULTURAL LANDS LYING ADJACENT TO THE RIVER CHANNEL.
14.00	THE LEFT BANK WILL OVERFLOW AND MAY REACH A MAXIMUM WIDTH OF 0.7 MILE WHICH WOULD AFFECT AGRICULTURAL LANDS ADJACENT TO THE RIVER AND WOULD PLACE FLOOD WATERS IN CLOSE PROXIMITY TO HARDY.

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
ID: HDYN1 HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
NWS FORM E-19 PAGE 8: DAMAGE

RIVER STAGE DATA

	20-	

	-----	19.40 06/02/1935

	18-	

	-----	17.00 06/24/1947

	16-	

	-----	14.83 06/17/1957

	14-	
14.00 - THE LEFT BANK WILL OVERFLOW AND MAY REACH A MAXIMUM WIDTH OF 0.7 MILE WHICH WOULD AFFECT AGRICULTURAL LANDS ADJACENT TO THE RIVER AND WOULD PLACE FLOOD WATERS IN CLOSE PROXIMITY TO HARDY.	-----	13.70 07/10/1950

12.50 - FLOW OVER THE ROAD WILL OCCUR ON THE RIGHT BANK AND MAY REACH A MAXIMUM WIDTH OF 0.9 MILE WHICH WOULD AFFECT AGRICULTURAL LANDS LYING ADJACENT TO THE RIVER CHANNEL.	-----	13.20 06/09/1941
	-----	12.60 06/09/1949
	12-	
12.00 - THE NORTH AND SOUTH APPROACHES TO THE RIVER BRIDGE CAN FLOOD. EVEN AT EXTREME FLOWS, THE TOWN OF HARDY IS OUTSIDE THE FLOOD PLAIN.	-----	11.83 09/13/1977
	-----	11.48 03/28/1960
	-----	11.20 07/07/1946
	-----	10.77 05/26/2008
11.00 - AT FLOOD STAGE, RURAL PASTURE AND FARMLANDS BEGIN TO FLOOD.	-----	10.40 06/06/1955
	10-	
	-----	9.91 07/15/1952
	-----	9.56 06/10/1940
	-----	9.18 04/25/1944
	-----	8.80 05/21/1999
	8-	
	-----	8.31 06/23/2003
	-----	8.00 06/17/1914
	-----	7.59 10/31/1979
	-----	7.10 04/07/1998
	-----	6.80 07/05/1904
	6-	
	-----	6.12 07/03/2004

	-----	5.50 06/06/1991
	-----	4.95 05/02/1906

	4-	
	-----	4.30 05/10/1913
	-----	4.00 06/07/1907

	2-	

	0-	

REACH: A FEW MILES UPSTREAM AND DOWNSTREAM OF THE GAGE.

ELEVATION ZERO: 1501.46

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS

ID: HDYN1

HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010

NWS FORM E-19 PAGE 9: STAFF

CONTACTS

SQ	CONTACT/REMARKS	PHONE
1	USGS Kansas MAINTENANCE.	785-628-8918
2	CRAIG DARE USGS REPRESENTATIVE RESPONSIBLE FOR KANSAS LOCATIONS IN HASTINGS HSA.	785-760-3035

LOCATION: REPUBLICAN RIVER NEAR HARDY, KS
ID: HDYNI HSA: GID

Revised, Printed Dates: 04/16/2009, 08/22/2010
NWS FORM E-19 PAGE 10: CONTACTS